

## Author Index

- Allen, G. H., 795  
 Ancona, M., 1159  
 Anyanwu, J. A., 973  
 Appelbe, W. F., 169
- Bailes, P. A., 379, 1011  
 Bailey, D., 595  
 Barak, A., 725, 901  
 Bennett, K. H., 359, 1041  
 Bernstein, R. L., 1021  
 Berth, E., 269  
 Blair, G. S., 1125  
 Bruestle, H. R., 473  
 Budgen, D., 767  
 Budinsky, F. J., 489
- Cargill, T. A., 153  
 Carter, B. S., 369  
 Carter, L. R., 221  
 Chang, Hsi, 925  
 Chou, H.-T., 943  
 Clematis, A., 1159  
 Clocksin, W. F., 669  
 Conta, J. F., 625  
 Cooper, R. E. M., 519, 571  
 Cowling, A. J., 611  
 Cox, M. G., 397  
 Crawley, M. J., 1103
- Dakin, R. J., 889  
 De Bruin, R., 963  
 Dewitt, D. J., 943  
 Dodero, G., 1159  
 Dromey, R. G., 1, 29  
 Dubery, J. M., 413
- Ebihara, Y., 343  
 Eckman, S. T., 439  
 Er, M. C., 499
- Field, J. A., 277  
 Fong, K. W., 87
- Gai, S., 693  
 Gait, J., 539  
 Ganzinger, H., 327  
 Garratt, P. W., 427  
 Gehani, N. H., 555  
 George, G., 119  
 Gladney, H. M., 823
- Grit, D. H., 41  
 Gujar, U. G., 191
- Hansen, K., 169  
 Hanson, D. R., 1205  
 Harland, D. M., 839  
 Harries, R., 519  
 Hikita, T., 677  
 Hoffmann, C. M., 1185  
 Holt, R. C., 489  
 Horspool, R. N., 503
- Ikeda, K., 343  
 Ince, D. C., 583, 1057  
 Ishihata, K., 677
- Jackson, M. I., 305  
 Jankowitz, H. T., 523  
 Jesshope, C. R., 1103
- Katz, R. H., 943  
 Keeffe, D., 1087  
 Kemmerer, R. A., 439  
 Kilfoil, P. W., 523  
 Klug, A. C., 943  
 Knight, J. C., 459
- Leathrum, J. G., 119  
 Lederer, B. R., 889  
 Leith, P., 65  
 Lester, L. N., 259  
 Litman, A., 725  
 Lobelle, M. C., 997  
 Locanthi, B., 131  
 Lovegrove, G. L., 1103  
 Lyon, G., 105
- Malone, J. R., 1125  
 Mariani, J. A., 1125  
 Marsland, T. A., 715  
 McGraw, J. R., 41  
 McGregor, J. J., 611  
 McKenzie, B. J., 519  
 Mezzalama, M., 693  
 Michaelson, G. G., 427  
 Middleditch, A. E., 739  
 Miller, W., 1025  
 Myers, E. W., 1025
- Nakamura, T., 343  
 Newey, M. C., 655  
 Nishikawa, M., 343
- O'Donnell, M. J., 1185  
 Onibere, E. A., 321
- Panchapakesan, S., 59  
 Parker, J. R., 761  
 Parker, K. R., 889  
 Partridge, D., 1141  
 Perko, A., 55  
 Perry, S., 795  
 Peyton Jones, S. L., 807  
 Pike, R., 131  
 Pinches, A. J., 413  
 Pino, A., 1159  
 Pryce, J. D., 705
- Rabkin, I., 523  
 Rees, M. J., 915  
 Reiser, J., 131  
 Revesz, G., 423  
 Robson, D. J., 915  
 Russell, J. L., 459  
 Russell, K. D., 473
- Saxena, S., 277  
 Schach, S. R., 523  
 Scheunemann, A., 503  
 Sears, K. H., 739  
 Shiloh, A., 901  
 Sitharama Iyengar, S., 925  
 Smith, E. T., 1073  
 Snider, D. M., 473  
 So, F. W. L., 191  
 Stewart, H. D., 473  
 Stirling, C., 239  
 Strandh, R. I., 1185  
 Subramanian, S., 59
- Tennent, R. D., 821  
 Thelander, H. A., 259  
 Tichy, W. F., 637  
 Tomlinson, G. M., 1087
- Van der Lann, C. G., 963  
 Vella, A. D., 991  
 Venkateswaran, 59
- Vliet, van, J. C., 823

## AUTHOR INDEX

- Wadler, P., 219  
Waite, W. M., 221, 655, 1121  
Wand, I. C., 1087  
Weiser, M., 515
- Wellings, A. J., 1087  
White, N. H., 359, 1041  
Willmertinger, W., 327  
Woodman, M., 1057
- Zaky, S. G., 489

## Key Word Index

- Abstraction, 839  
Access methods, 943  
Ada, 555, 1087  
Algol, 68, 963  
Algolw, 715  
Algorithm, 925  
ANSI, 821  
Assembly debugging system, 59  
Asynchronous debugging, 153  
Attached processors, 705  
Automation, 889  
Awk, 1011  
  
Balanced tree, 925  
Binary search tree, 925  
Bitblt, 131  
Bitmap graphics, 131  
Bitmap terminal, 131, 153  
  
C, 379, 693  
Cache, 889  
CAM, 259  
Case statement, 1021  
Character generation, 191  
Closure, 119  
CODASYL, 523  
Code generation, 503, 655, 1021  
Communications, 427  
Compact source program, 625  
Compiler(s), 503, 655, 991, 1205  
Compiling on-the-fly, 131  
Completeness, 839  
Computer aided manufacture, 259  
Computer graphics, 191  
Concurrency, 169, 839  
Concurrent, 739  
Concurrent processes, 539  
Configuration management, 637  
Context-sensitive syntax, 1141  
Control structure, 29  
Coroutines, 379  
Cost, 221  
Critique, 1139  
Cross assemblers, 1159  
  
Database, 523, 1011  
Database systems, 943  
Data flow diagrams, 1057  
Data management, 473  
Data processing, 473  
Data storage representations, 823  
  
Data structure independence, 29  
Data structures, 359  
Deadlock free, 41  
Debuggers, 1073  
Debugging, 539  
Decentralized control, 725  
Deltas, 637  
Derived data, 369  
Derived types, 555  
Design choices, 105  
Diagnostics, 359, 1041  
Distributed computing, 1139  
Distributed networks, 839  
Distributed operating system(s), 725, 901  
Divide and conquer, 41  
Document description, 327  
Dynamic process migration, 901  
Dynamic production grammar, 1141  
Dynamic sorting array, 677  
Dynamic storage allocation, 693  
  
Edit distance, 1025  
Editing, 369  
Editor, 1103  
Edi script, 1025  
Embedded systems, 839  
Encapsulation, 169  
Equation, 1185  
Error-detection, 239  
Expression parsing, 1205  
  
File comparison, 1025  
File replication, 1087  
File store, 889  
File system design, 943  
Forced termination, 29  
Formal verification, 439  
Formatting specification, 327  
FORTRAN, 321, 397  
Functional programming, 807  
  
Garbage collection, 669  
Global variables, 499  
Graham-Glanville, 503  
Graphical, 1103  
Graphics debugging, 153  
Graphics editor, 795, 915  
Graphics hardware, 131  
Guarded command, 1141

- HANDIN, 611  
 HEP computer, 41  
 High-level debugging, 523  
 History management, 637  
 Idioms, 105  
 IKBS, 65  
 Implicit data structures, 55  
 Incremental compilation, 839  
 Incremental parsing, 489  
 Induction, 1  
 Inductive stepwise refinement, 1  
 Information hiding, 119  
 In-order traversal, 925  
 Interactive, 87  
 Interactive assembler, 59  
 Interactive circuit layout, 795  
 Interactive systems, 839  
 INTERLISP, 65  
 Intermediate level language, 277  
 Interpreter, 1185  
 Interprocess communication, 1073  
 ISDMS, 473  
 ISO, 821  
 Iteration, 655  
 Language, 105  
 Language design, 655  
 Language extension, 379  
 Language interfaces, 595  
 Large scale storage, 889  
 Lazy evaluation, 1185  
 Lexical analysis, 1121  
 Library software, 705  
 LL(1) parsing, 269  
 Load-balancing, 901  
 Local area network, 1087  
 Local computer networks, 343  
 Local variables, 499  
 Logic programming, 595, 669, 1185  
 Logic simulation, 693  
 Longitudinal, 369  
 Loop exits, 29  
 Loops, 29  
 Macro- and meta-assemblers, 1159  
 Mascot, 413, 767  
 Mathematical computation, 397  
 Mathematical software, 705  
 Memory management, 693  
 Message passing, 677  
 Microcomputers, 59, 321  
 Microcontroller, 459  
 Microprocessor software, 277  
 Microtext, 397  
 Mixed language programming, 963  
 Modula, 413  
 Modularity, 397, 767  
 Modularization, 119  
 Modula-2, 767  
 Monitors, 839  
 Monitor transformation, 677  
 Multiple founts, 191  
 Multi-process systems, 1073  
 NAG-FORTRAN library, 963  
 Network(s), 427, 889  
 Network management, 343  
 Network operating systems, 1087  
 Network transparency, 725, 1087  
 Normal form, 1185  
 Nucleus, 739  
 ODE solvers, 705  
 Operating systems, 87, 1139  
 Optimization, 991  
 Orienting mechanism, 1  
 Overflow, 655  
 Parser, 625  
 Parser generator(s), 221, 807  
 Pascal, 221, 269, 359, 1103, 1141  
 Pascal dialects, 1159  
 Pascal standards, 821  
 Pattern-matching, 1185  
 Performance monitor, 523  
 Portability, 277, 397, 523  
 Portable, 321  
 Post-condition, 1  
 Precedence, 1205  
 Priority queues, 55  
 Probe effect, 539  
 Processes, 839  
 Processor crashes, 973  
 Program assessment, 611  
 Program design language, 583  
 Program development, 1, 489  
 Programming courses, 611  
 Programming environment, 105  
 Programming language(s), 439, 459, 555  
 Programming language constructs, 823  
 Programming language design, 839  
 Programming methodology, 1  
 Programming style, 29  
 Programming support environment, 1139  
 Programming techniques, 761  
 Programs, 321  
 Program transformation, 677  
 Program validation, 439  
 Prolog, 595, 669  
 Protocols, 427  
 Real-time, 277, 739, 767  
 Real-time programming, 413

- Real-time systems, 413  
Recursive descent, 221  
Recursive-descent parsing, 1205  
Reduction, 1185  
Remote debugging, 153  
Repeated measures, 369  
Revisions, 637
- Semantic network, 1057  
Separate compilation, 715  
Shell, 515  
SIMULA, 259  
Simulation, 459  
Slide display, 915  
Software engineering, 767, 823  
Software maintenance, 583  
Software technology, 119  
Software tool(s), 439, 583, 1057, 1159  
Source level Debugging, 539  
Source/Object program management, 715  
Stable storage, 973  
Stepwise abstraction, 1141  
Storage structures, 943  
Structure clashes, 1  
Structured analysis, 1057  
Structures, 105  
Subroutine library design, 397  
Supercomputers, 87  
Symbolic execution, 439  
Symbol tables, 153  
Synchronization, 739  
Synchronization errors, 539  
Syntax diagrams, 1  
Syntax directed, 1103  
Syntax-directed editor, 489  
Syntax-directed error correction, 239
- Syntax-table, 625  
Systems analysis, 1057  
Systems programming languages, 169
- Table-driven, 625  
Tabs, 1121  
Tape library, 889  
Teaching programming, 611  
Testing, 439  
Text formatting, 327  
Threaded tree, 925  
Time-sharing, 87  
Time/space efficiency, 269  
Trace, 523  
Transformations of characters, 191  
Type conversion, 761  
Type equivalence, 1141  
Types, 555  
Typing, 169
- Units of measure, 555  
UNIX, 973, 1011, 1087, 1139  
User interface, 539
- Variable sharing, 677  
Version control, 637  
Virtual program library, 963  
Virtual terminal, 515  
VLSI, 795
- White space, 1121  
Window systems, 515  
Wine-tasting, 1011  
Wire-wrap boards, 259  
Wiring schedules, 259